

- 54 -

ABSTRACT OF THE DISCLOSURE

Wavelength converter device for generating a converted radiation at frequency Ω_g through interaction between at least one signal radiation at frequency Ω_g and at least one pump radiation at frequency Ω_g , with an input for the at least one signal radiation at frequency Ω_g ; a pump light source for generating the at least one pump radiation at frequency Ω_g , an output for taking out the converted radiation at frequency Ω_g , a structure for transmitting the signal radiation, the structure including one optical resonator having a non-linear material, having an optical length of at least $40 \cdot \eta/2$, wavelength η being the wavelength of the pump radiation, and resonating at the pump, signal and converted frequencies Ω_p , Ω_s and Ω_g . The structure has a further optical resonator coupled in series to the optical resonator, the further optical resonator having a non-linear material, having an optical length of at least $40 \cdot \eta/2$, wherein η is the wavelength of the pump radiation, and resonating at the pump, signal and converted Ω_p , Ω_s and Ω_g , wherein by propagating through the structure, the pump and signal radiation generate the converted radiation by non-linear interaction within the optical resonators.